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EXAMINER	
GIESY, ADAM	

ART UNIT	PAPER NUMBER
2627	

DATE MAILED: 06/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/648,018	FUJIUNE ET AL.
	Examiner	Art Unit
	Adam R. Giesy	2627

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 August 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 August 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. Figures 1-3 and 14-18 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: Optical Disc Drive for Identifying and Processing Multiple Optical Disc Types.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claim 6 recites the limitation "the first and the second ones" in lines 3 and 4 of the claim. There is insufficient antecedent basis for this limitation in the claim.

In order to further prosecution, Examiner will read the limitation as "the first and the second layers."

Claim Rejections - 35 USC § 101

6. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7. Claims 20-22 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 20-22 are drawn to a "program" *per se* as recited in the preamble and as such is non-statutory subject matter. See MPEP §2106.IV.B.1.a. Data structures not claimed as embodied in computer readable media are descriptive material *per se* and are not statutory because they are not capable of causing functional change in the computer. See, e.g. Warmerdam, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure *per se* held non-statutory). Such claimed data structures do not define any structural and functional interrelationships between the data structure and other claimed aspects of the invention, which permit the data structure's functionality to be realized. In contrast, a claimed computer readable medium encoded with a data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure's functionality to be realized, and is thus statutory. Similarly, computer programs claimed as computer listings *per se*, i.e., the descriptions or expressions of the programs are not physical

"things." They are neither computer components nor statutory processes, as they are not "acts" being performed. Such claimed computer programs do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer, which permit the computer program's functionality to be realized.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 1-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hwang (US Pat. No. 6,061,318) in view of Applicant's Admitted Prior Art.

Regarding claim1, Hwang discloses an optical disc drive for reading and/or writing information from/on multiple types of optical discs, of which information storage layers have mutually different depths as measured from surfaces thereof (see Figures 1 and 2), the optical disc drive comprising: a light source for emitting light (Figure 1, element 3 – the light sources is inherently provided in the optical pick-up); a lens for converging the light to form a beam spot (Figure 1, element 3 – the lens is inherently provided in the optical pick-up; see also column 3, line 59); a photodetector for detecting the light that has been reflected from an information storage layer and outputting a reflected light signal (Figure 1, element 3 – the detector is inherently provided in the optical pick-up); a focus driver for moving the beam spot perpendicularly to the

information storage layer of an loaded optical disc, which has been loaded into the optical disc drive, by controlling position of the lens (Figure 1, element 3 – the focus driver is inherently provided in the optical pick-up; see also column 3, lines 57-59); a light quantity detector for generating a light quantity signal, representing the quantity of reflected light, on receiving the reflected light signal from the photodetector every time the beam spot is moved (Figure 1, element 35; see also column 3, line 65 thru column 4, line 10 – this passage suggests that the focus error signal is generated based on the reflections, or quantity of light, that is reflected from the surface of the disc and picked up by the photodetector); and a type recognizer for recognizing a type of the loaded optical disc by estimating a depth of the information storage layer of the loaded optical disc from a surface thereof according to a degree of symmetry of a waveform of the light quantity signal (Figure 1, element 8; see column 5, lines 55-67 – this passage describes that the type of disc is determined by the symmetry factor, or average of the absolute value of the focus error signal). Hwang does not disclose a spherical aberration generator.

Applicant admits that a spherical aberration generator for generating a minimum spherical aberration when the beam spot is located at a reference depth that is defined by the depths of the information storage layers of the multiple types of optical discs is well known in the art (see pages 9 and 10, paragraph 0015 of the current application).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the optical disc recognition system as disclosed by

Hwang with the spherical aberration generator, the motivation being to compensator for the aberration inherent in the objective lens of the optical system.

Regarding claim 2, the combination of Hwang and Applicant's Admitted Prior Art disclose all of the limitations of claim 1 as discussed in the claim 1 rejection above. Hwang further discloses that the optical disc drive further comprises a symmetry detector for outputting a symmetry indicating signal, representing the degree of symmetry of the waveform of the light quantity signal, by determining whether the waveform of the light quantity signal is symmetric or asymmetric in a predetermined period (Figure 1, element 8; see also column 4, lines 55-65), and wherein the type recognizer recognizes the type of the loaded optical disc in accordance with the symmetry indicating signal (Figure 1, column 8; see also column 6, lines 55-59).

Regarding claim 3, the combination of Hwang and Applicant's Admitted Prior Art disclose all of the limitations of claim 2 as discussed in the claim 2 rejection above. Hwang further discloses that the optical disc drive further comprises a focus signal generator for generating a focus signal representing a positional relationship between the beam spot and the information storage layer (Figure 1, element 8; see also column 4, lines 11-19), wherein the symmetry detector finds a first time, at which the focus signal has the highest level during the predetermined period, and a second time, at which the focus signal has the lowest level during the predetermined period, and determines, by first and second levels of the light quantity signal at the first and second times, respectively, whether the waveform of the light quantity signal is symmetric or asymmetric (see Figure 4A, element 160).

Regarding claim 4, the combination of Hwang and Applicant's Admitted Prior Art disclose all of the limitations of claim 3 as discussed in the claim 3 rejection above. Hwang further discloses that the symmetry detector regards the waveform of the light quantity signal as symmetric if the difference between the first and second levels of the light quantity signal at the first and second times is equal to zero, and as asymmetric if the difference is not equal to zero (Figure 4B, element 170 – note that the value of alpha can be set so that the D value must equal zero in order to be considered symmetrical).

Regarding claim 5, the combination of Hwang and Applicant's Admitted Prior Art disclose all of the limitations of claim 4 as discussed in the claim 4 rejection above. Hwang further discloses that the symmetry indicating signal generated by the symmetry detector represents that the difference is zero, positive or negative (see Figure 4B, element 170 – the symmetrical nature of the signal is indicated by a positive "1" or a zero), and wherein the type recognizer determines, according to the symmetry indicating signal, whether the depth of the information storage layer of the loaded optical disc from the surface thereof is greater or smaller than the reference depth (Figure 1, element 8 – the servo controller must inherently have a reference depth wherein it can raise and lower the focal point of the laser by adjusting the objective lens).

Regarding claim 6, the combination of Hwang and Applicant's Admitted Prior Art disclose all of the limitations of claim 1 as discussed in the claim 1 rejection above. Hwang further discloses that the reference depth falls within a range that is defined by the depths of the information storage layers of the first and the second layers of the multiple types of optical discs (see abstract – abstract suggests that the disc is

determined to be a multilayer disc when two reflection curves exist, which also suggests that the focal point is between the two information layers of the disc).

Regarding claim 7, the combination of Hwang and Applicant's Admitted Prior Art disclose all of the limitations of claim 1 as discussed in the claim 1 rejection above. Hwang further discloses that the type recognizer determines the number of information storage layers of the loaded optical disc according to the waveform of the light quantity signal (see abstract).

Regarding claim 8, the combination of Hwang and Applicant's Admitted Prior Art disclose all of the limitations of claim 1 as discussed in the claim 1 rejection above. Applicant's Admitted Prior Art further discloses that the optical disc drive further comprises an aberration setter for generating an aberration setting signal that defines how much spherical aberration should be generated (Figure 17, element 30), wherein the spherical aberration generator generates the spherical aberration in accordance with the aberration setting signal, and wherein the type recognizer also estimates the depth of the information storage layer of the loaded optical disc from the surface thereof in accordance with the aberration setting signal (see page 8, paragraph 0013).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the optical drive as disclosed by Hwang with the aberration setting control and generator, the motivation being to be better able to focus the light beam at any depth in any disc for the purpose of getting a more unified read signal.

Regarding claim 9, Hwang discloses an optical disc drive for reading and/or writing information from/on an optical disc including multiple information storage layers that have mutually different depths as measured from a surface thereof (see Figures 1 and 2), the optical disc drive comprising: a light source for emitting light (Figure 1, element 3 – the light sources is inherently provided in the optical pick-up); a lens for converging the light to form a beam spot (Figure 1, element 3 – the lens is inherently provided in the optical pick-up; see also column 3, line 59); a photodetector for detecting the light that has been reflected from an information storage layer and outputting a reflected light signal (Figure 1, element 3 – the detector is inherently provided in the optical pick-up); a focus driver for moving the beam spot perpendicularly to the information storage layer of an loaded optical disc (Figure 1, element 3 – the focus driver is inherently provided in the optical pick-up; see also column 3, lines 57-59); a light quantity detector for generating a light quantity signal, representing the quantity of reflected light, on receiving the reflected light signal from the photodetector every time the beam spot is moved (Figure 1, element 35; see also column 3, line 65 thru column 4, line 10 – this passage suggests that the focus error signal is generated based on the reflections, or quantity of light, that is reflected from the surface of the disc and picked up by the photodetector); and a layer number finder for finding a layer number of the information storage layer, on which the beam spot should be located, by the waveform of the light quantity signal, the information storage layers being numbered in an ascending order from the surface of the optical disc (Figure 1, element 8; see column 4, lines 33-44 – this passage describes that the drive can detect read signals, RL1 and

RL2, which suggests that the layers of the disc can be identified accordingly). Hwang does not disclose a spherical aberration generator.

Applicant admits that a spherical aberration generator for generating a minimum spherical aberration when the beam spot is located at a reference depth that is defined by the depths of the information storage layers of the multiple types of optical discs is well known in the art (see pages 9 and 10, paragraph 0015 of the current application).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the optical disc recognition system as disclosed by Hwang with the spherical aberration generator, the motivation being to compensator for the aberration inherent in the objective lens of the optical system.

Regarding claim 10, the combination of Hwang and Applicant's Admitted Prior Art disclose all of the limitations of claim 9 as discussed in the claim 9 rejection above. Hwang further discloses that the optical disc drive further comprises a selector for selecting one of the information storage layers by the layer number that has been found by the layer number finder and moving the beam spot toward the vicinity of the selected information storage layer by driving the focus driver (Figure 1, element 8); and a focus signal generator for generating a focus signal representing a positional relationship between the beam spot and the selected information storage layer (Figure 1, element 8; see also column 4, lines 11-19).

Regarding claim 11, the combination of Hwang and Applicant's Admitted Prior Art disclose all of the limitations of claim 10 as discussed in the claim 10 rejection above. Hwang further discloses that the selected information storage layer is changeable in

accordance with an instruction of the selector (see column 3, lines 57-62 – the focus servo, which is controlled by the servo signal processor moves the objective lens to focus on the information layer and therefore can select a layer by adjusting the distance of the objective lens).

Regarding claim 12, the combination of Hwang and Applicant's Admitted Prior Art disclose all of the limitations of claim 9 as discussed in the claim 9 rejection above. Hwang further discloses that the optical disc drive further comprises a symmetry detector for outputting a symmetry indicating signal, representing the degree of symmetry of the waveform of the light quantity signal (Figure 1, element 8; see also column 4, lines 55-65), by determining whether the waveform of the light quantity signal is symmetric or asymmetric in a predetermined period (Figure 4A, element 160), and wherein the layer number finder finds the layer number of the selected information storage layer of the optical disc in accordance with the symmetry indicating signal (Figure 4B, elements 180-240 – this figure illustrates how the focus-up and focus down operations function after the symmetry has been determined).

Regarding claim 13, the combination of Hwang and Applicant's Admitted Prior Art disclose all of the limitations of claim 12 as discussed in the claim 12 rejection above. Hwang further discloses that the symmetry detector finds a first time, at which the focus signal has the highest level during the predetermined period, and a second time, at which the focus signal has the lowest level during the predetermined period (column 4, lines 33-44), and determines, by first and second levels of the light quantity signal at the first and second times, respectively, whether the waveform of the light quantity signal is

symmetric or asymmetric (Figure 4A, element 160 – this is performed after the various layer reflections are detected).

Regarding claim 14, Hwang discloses an optical disc drive for reading and/or writing information from/on an optical disc that includes an information storage layer, the optical disc drive comprising: a light source for emitting light (Figure 1, element 3 – the light sources is inherently provided in the optical pick-up); a lens for converging the light to form a beam spot (Figure 1, element 3 – the lens is inherently provided in the optical pick-up; see also column 3, line 59); a photodetector for detecting the light that has been reflected from the information storage layer and outputting a reflected light signal (Figure 1, element 3 – the detector is inherently provided in the optical pick-up); a focus driver for moving the beam spot back and forth between one side and the other side of the information storage layer and perpendicularly to the information storage layer by controlling the position of the lens (Figure 1, element 3 – the focus driver is inherently provided in the optical pick-up; see also column 3, lines 57-59); a light quantity detector for generating a light quantity signal, representing the quantity of the reflected light, on receiving the reflected light signal from the photodetector every time the beam spot is moved (Figure 1, element 35; see also column 3, line 65 thru column 4, line 10 – this passage suggests that the focus error signal is generated based on the reflections, or quantity of light, that is reflected from the surface of the disc and picked up by the photodetector); and a symmetry detector for outputting a symmetry indicating signal, representing the degree of symmetry of the waveform of the light quantity signal, by determining whether the waveform of the light quantity signal is symmetric or

asymmetric (Figure 1, element 8). Hwang does not disclose a spherical aberration generator.

Applicant admits that a spherical aberration generator for generating a spherical aberration is well known in the art (see pages 9 and 10, paragraph 0015 of the current application) and that an aberration regulator for generating and outputting the control signal to the spherical aberration generator is well known in the art (also see pages 9 and 10, paragraph 0015 of the current application).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the optical disc recognition system as disclosed by Hwang with the spherical aberration generator, the motivation being to compensator for the aberration inherent in the objective lens of the optical system.

Regarding claim 15, the combination of Hwang and Applicant's Admitted Prior Art disclose all of the limitations of claim 14 as discussed in the claim 14 rejection above. Hwang further discloses that the optical disc drive further comprises a focus signal generator for generating a focus signal representing a positional relationship between the beam spot and the information storage layer (Figure 1, element 8; see also column 4, lines 11-19), wherein the symmetry detector finds a first time, at which the focus signal has the highest level during a predetermined period, and a second time, at which the focus signal has the lowest level during the predetermined period (see Figure 4A, element 160), and determines, by first and second levels of the light quantity signal at the first and second times, respectively, whether the waveform of the light quantity

signal is symmetric or asymmetric during the predetermined period (Figure 1, element 8; see also column 4, lines 55-65).

Regarding claim 16, the combination of Hwang and Applicant's Admitted Prior Art disclose all of the limitations of claim 14 as discussed in the claim 14 rejection above. Hwang further discloses that the optical disc drive further comprises a focus signal generator for generating a focus signal representing a positional relationship between the beam spot and the information storage layer (Figure 1, element 8; see also column 4, lines 11-19), wherein the symmetry detector finds a first time, at which the light quantity signal has the highest level during a predetermined period, and a second time, at which the light quantity signal has the lowest level during the predetermined period (see Figure 4A, element 160), and determines, by first and second levels of the focus signal at the first and second times, respectively, whether the waveform of the light quantity signal is symmetric or asymmetric (Figure 1, element 8; see also column 4, lines 55-65).

Regarding claim 17, Hwang discloses a method for recognizing a type of a optical disc, which has been loaded into the optical disc drive, as one of multiple types of optical discs, of which information storage layers have mutually different depths as measured from surfaces thereof, the method comprising steps of: emitting light (Figure 1, element 3 – the light sources is inherently provided in the optical pick-up); converging the light to form a beam spot by a lens (Figure 1, element 3 – the lens is inherently provided in the optical pick-up; see also column 3, line 59); detecting the light that has been reflected from an information storage layer to generate a reflected light signal

(Figure 1, element 3 – the detector is inherently provided in the optical pick-up); moving the beam spot perpendicularly to the information storage layer of the loaded optical disc by controlling position of the lens (Figure 4A, element 110); generating a light quantity signal, representing quantity of a reflected light, on receiving the reflected light signal every time the beam spot is moved (120 – the light signal that is representative of the quantity of light detected is measured and therefore must have first been generated); and recognizing a type of the loaded optical disc by estimating the depth of the information storage layer of the optical disc from the surface thereof according to a degree of symmetry of the waveform of the light quantity signal (250). Hwang does not disclose generating spherical aberration.

Applicant admits that a spherical aberration generator for generating a spherical aberration is well known in the art (see pages 9 and 10, paragraph 0015 of the current application)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the optical disc recognition system as disclosed by Hwang with the generation of spherical aberration, the motivation being to compensator for the aberration inherent in the objective lens of the optical system.

Regarding claim 18, Hwang discloses a method for finding a beam spot of light on one of multiple information storage layers of an optical disc, the information storage layers having mutually different depths as measured from a surface of the optical disc, the method comprising steps of: emitting light (Figure 1, element 3 – the light sources is inherently provided in the optical pick-up); getting the light converged, and a beam spot

formed, by a lens (Figure 1, element 3 – the lens is inherently provided in the optical pick-up; see also column 3, line 59); detecting the light that has been reflected from the information storage layer to generate a reflected light signal (Figure 1, element 3 – the detector is inherently provided in the optical pick-up); moving the beam spot perpendicularly to the information storage layers by controlling the position of the lens (Figure 4A, element 110); generating a light quantity signal, representing the quantity of the reflected light, on receiving the reflected light signal every time the beam spot is moved (120 – the light signal that is representative of the quantity of light detected is measured and therefore must have first been generated); and finding the layer number of the information storage layer, on which the beam spot should be located, by the waveform of the light quantity signal, the information storage layers being numbered in an ascending order from the surface of the optical disc (Figure 1, element 8; see column 4, lines 33-44 – this passage describes that the drive can detect read signals, RL1 and RL2, which suggests that the layers of the disc can be identified accordingly).

Applicant admits that a spherical aberration generator for generating a spherical aberration is well known in the art (see pages 9 and 10, paragraph 0015 of the current application)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the optical disc recognition system as disclosed by Hwang with the generation of spherical aberration, the motivation being to compensator for the aberration inherent in the objective lens of the optical system.

Regarding claim 18, Hwang discloses a method for regulating a spherical aberration with respect to an information storage layer of an optical disc, the method comprising steps of: emitting light (Figure 1, element 3 – the light sources is inherently provided in the optical pick-up); getting the light converged, and a beam spot formed, by a lens (Figure 1, element 3 – the lens is inherently provided in the optical pick-up; see also column 3, line 59); detecting the light that has been reflected from the information storage layer to generate a reflected light signal (Figure 1, element 3 – the detector is inherently provided in the optical pick-up); moving the beam spot back and forth between one side and the other side of the information storage layer and perpendicularly to the information storage layer by controlling the position of the lens (Figure 4A, element 110); generating a light quantity signal, representing the quantity of the reflected light, on receiving the reflected light signal every time the beam spot is moved (120 – the light signal that is representative of the quantity of light detected is measured and therefore must have first been generated); outputting a symmetry indicating signal, representing the degree of symmetry of the waveform of the light quantity signal, by determining whether the waveform of the light quantity signal is symmetric or asymmetric (see Figures 4A and 4B, the arrow going from element 160 to element 170); identifying the symmetry indicating signal, representing that the waveform of the light quantity signal is symmetric, and generating a control signal associated with the symmetry indicating signal identified (Figure 4B, element 170).

Applicant admits that a spherical aberration generator for generating a spherical aberration is well known in the art (see pages 9 and 10, paragraph 0015 of the current application)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the optical disc recognition system as disclosed by Hwang with the generation of spherical aberration, the motivation being to compensator for the aberration inherent in the objective lens of the optical system.

Apparatus claim 20 is drawn to the apparatus corresponding to the method of using same as claimed in claim 17. Therefore apparatus claim 20 corresponds to method claim 17, and is rejected for the same reasons of anticipation (obviousness) as used above.

Apparatus claim 21 is drawn to the apparatus corresponding to the method of using same as claimed in claim 18. Therefore apparatus claim 21 corresponds to method claim 18, and is rejected for the same reasons of anticipation (obviousness) as used above.

Apparatus claim 22 is drawn to the apparatus corresponding to the method of using same as claimed in claim 19. Therefore apparatus claim 22 corresponds to method claim 19, and is rejected for the same reasons of anticipation (obviousness) as used above.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Adam R. Giesy whose telephone number is (571) 272-7555. The examiner can normally be reached on 8:00am- 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William R. Korzuch can be reached on (571) 272-7589. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ARG 5/24/2006

THANG V. TRAN
PRIMARY EXAMINER